

10/518823

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Structure of Preferred embodiments of the invention

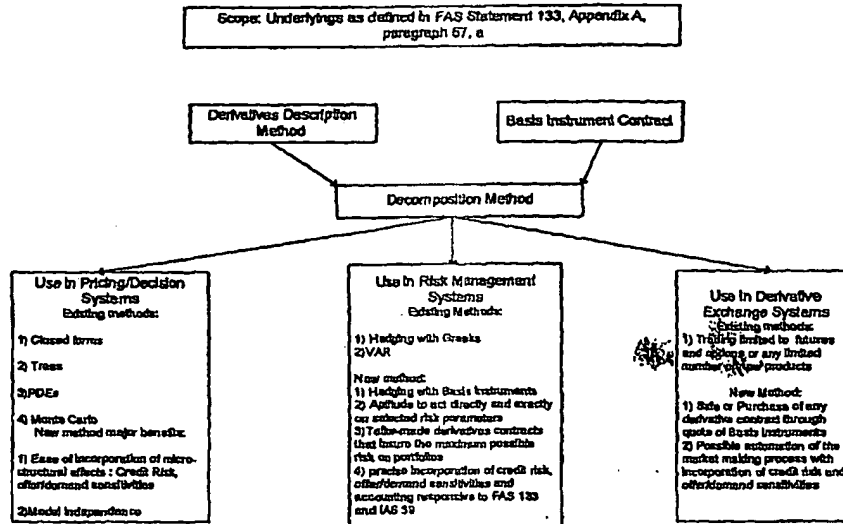


Figure 1: Structure of preferred embodiments for the invention

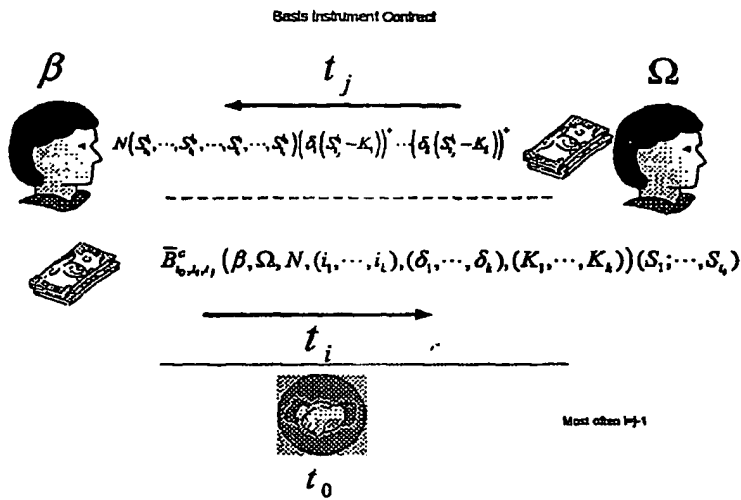


Figure 2: Definition of Basis Instruments Contracts

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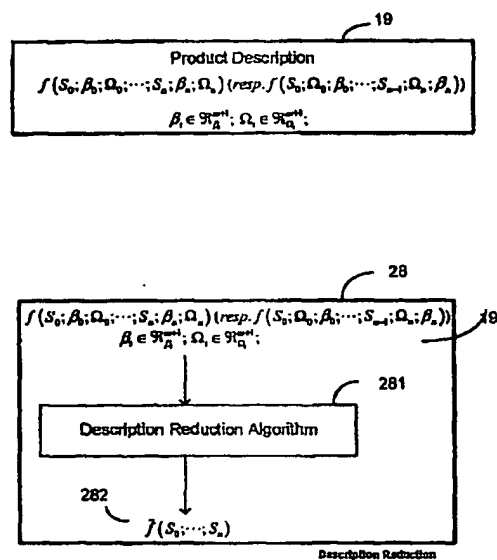


Figure 3: Derivatives Reduction

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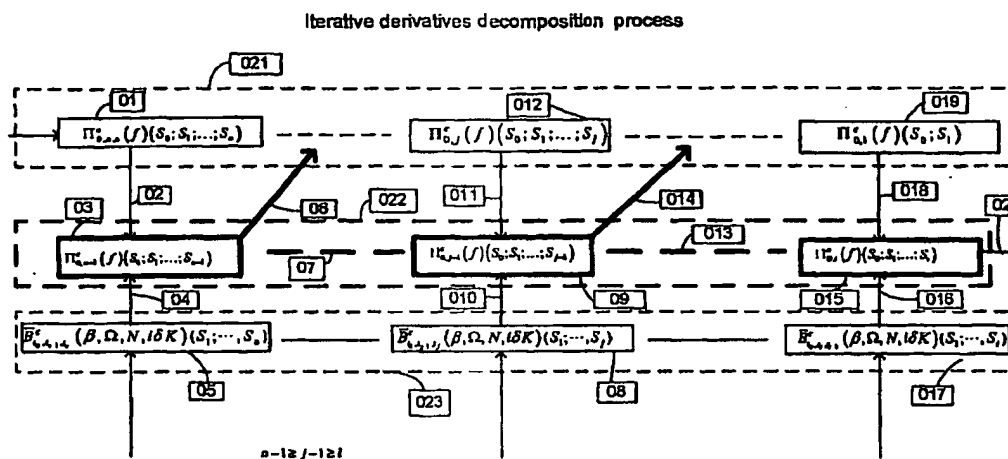


Figure 4: Iterative Derivatives Decomposition Process

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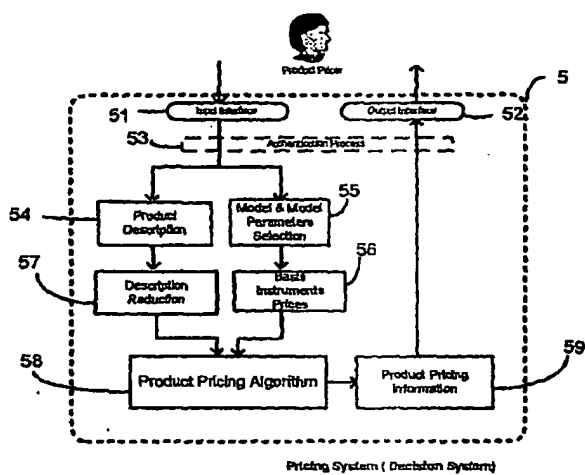


Figure 5: Pricing system

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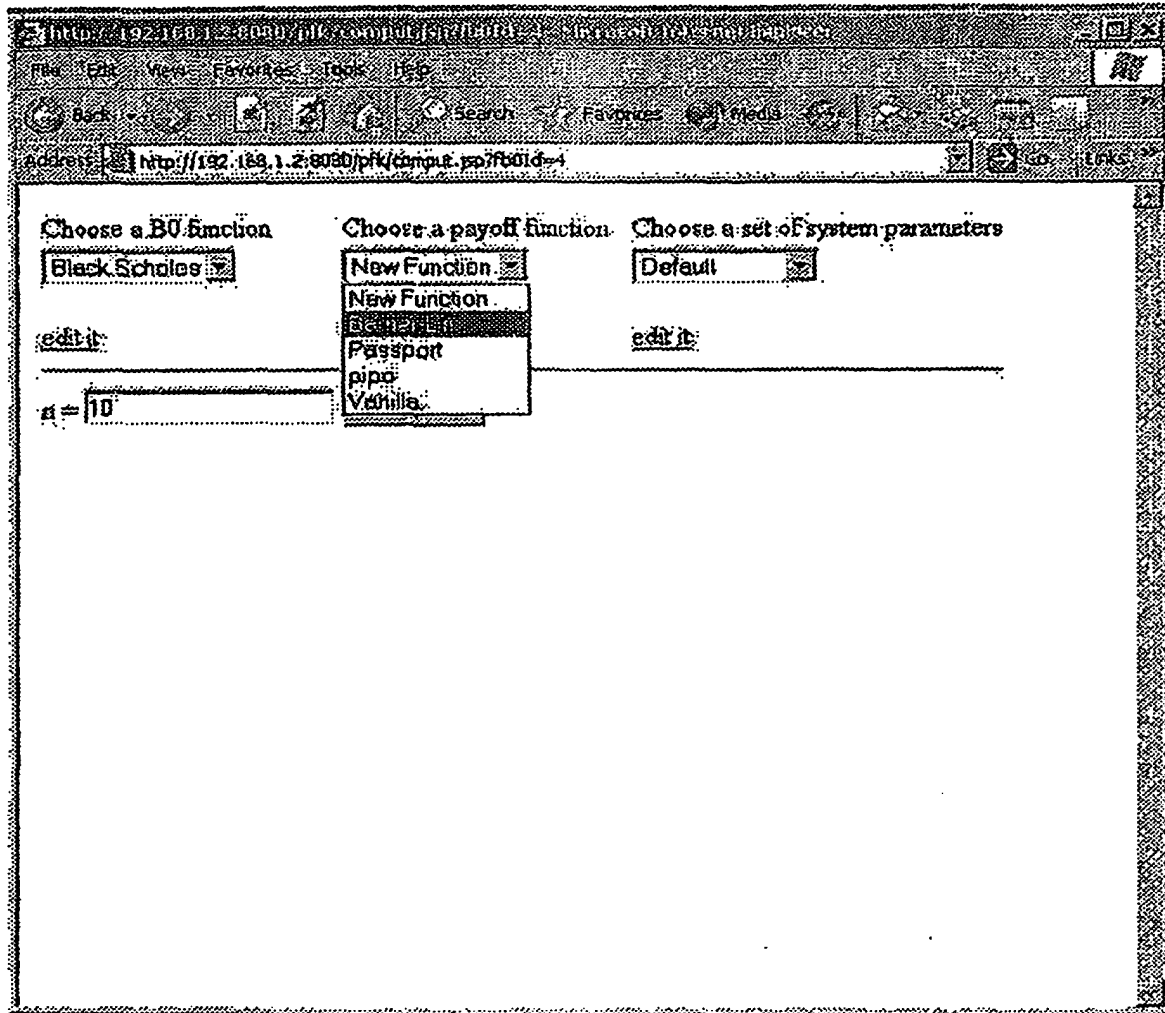


Figure 6: Web Interface : Main screen

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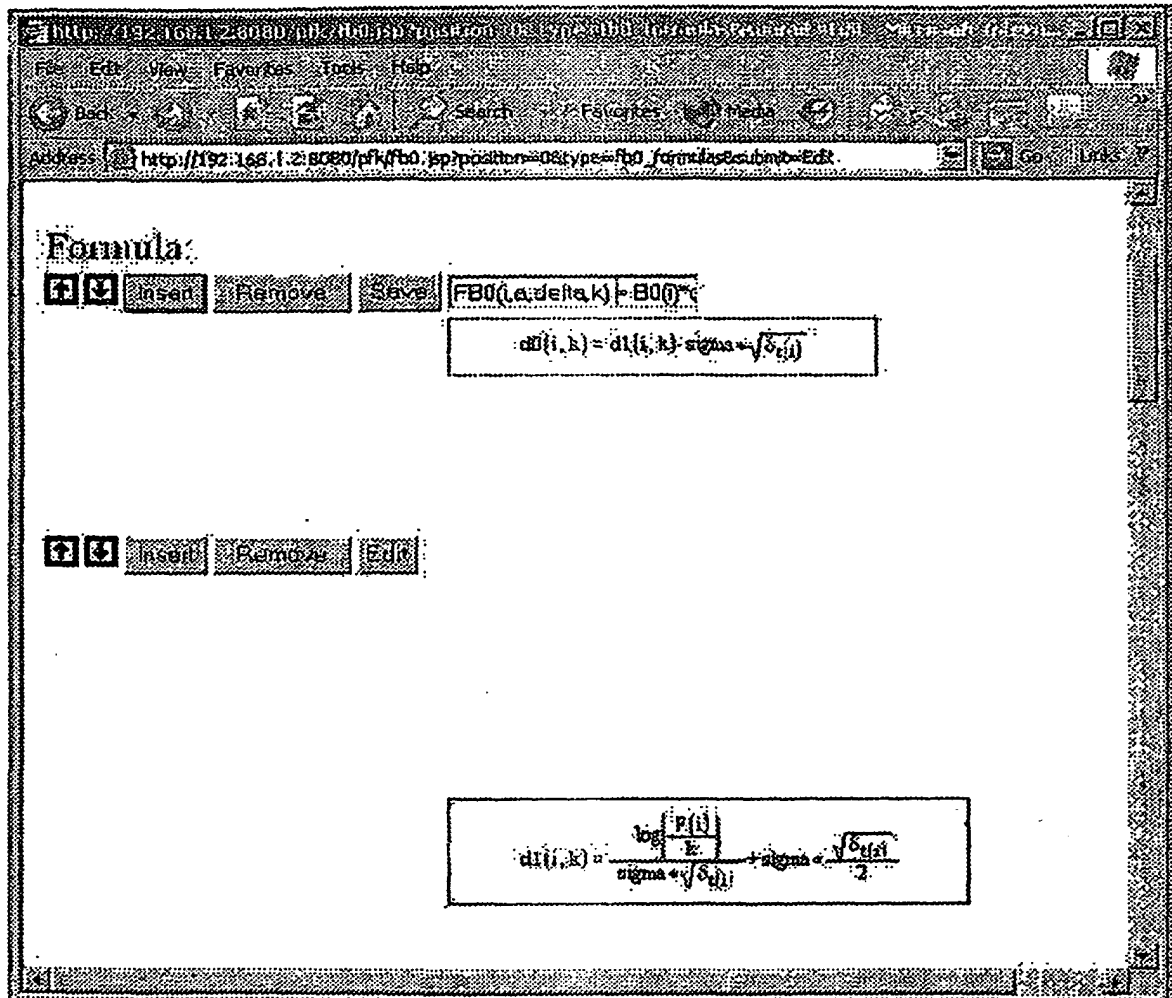


Figure 7: Web Interface : Basis Instrument Input

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Variables:

Number of Variables: 2

Edit All Vars

Variable: 0

Name: S

Formula: S()

Low bound: LS()

High bound: HS()

Variable: 1

Name: p

Formula: p

(j) = (p(j-1)*Beta*(S(j)-S(j-1)))

Low bound: Lp(j-1)+Min(LS(j)-HS(j-1), -HS(j)+LS(j-1))

High bound: Hp(j-1)+Max(HS(j), LS(j-1), -LS(j)+HS(j-1))

Initial Value: 0.0

Figure 8: Web Interface : Payoff Function Input

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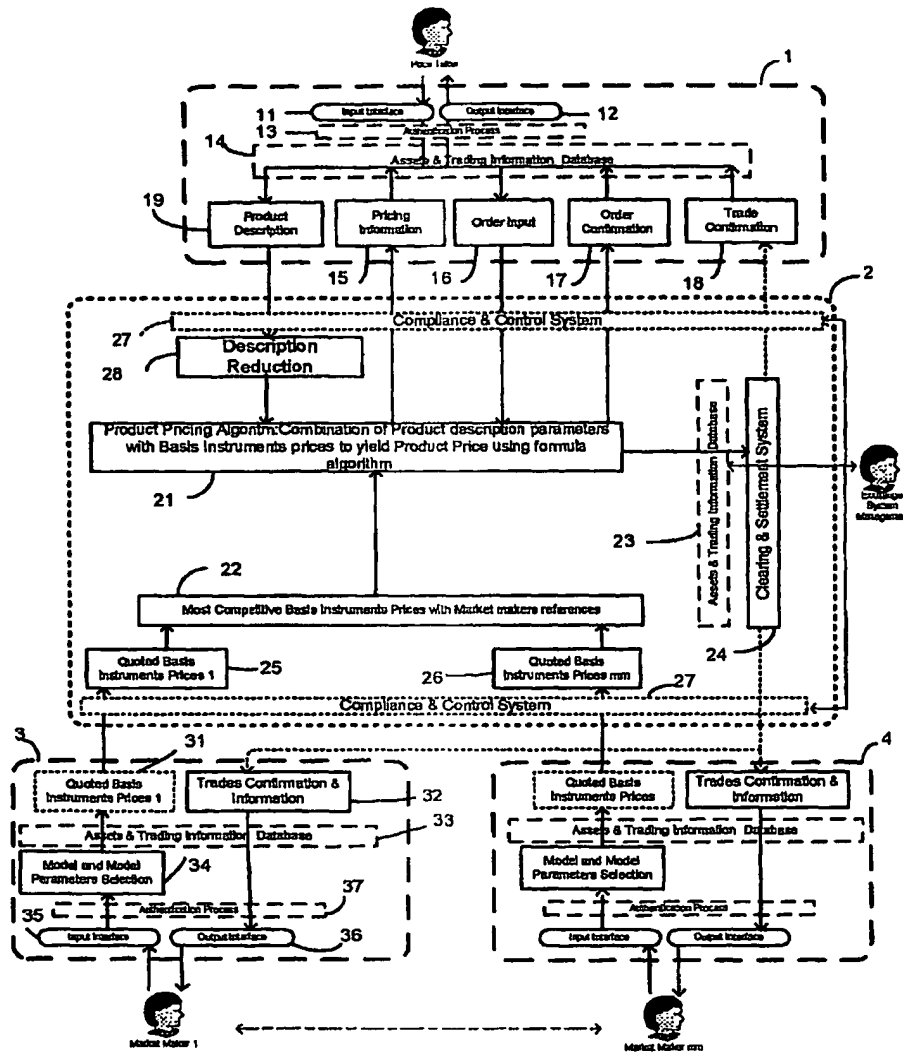


Figure 9: Exchange trading system

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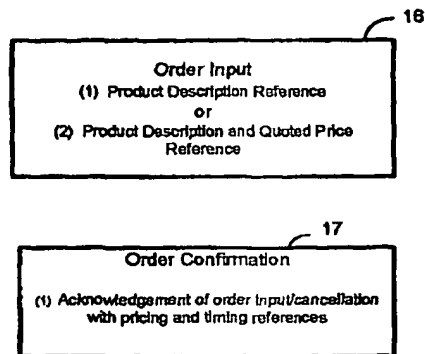


Figure 10: Exchange Order Input & Confirmation

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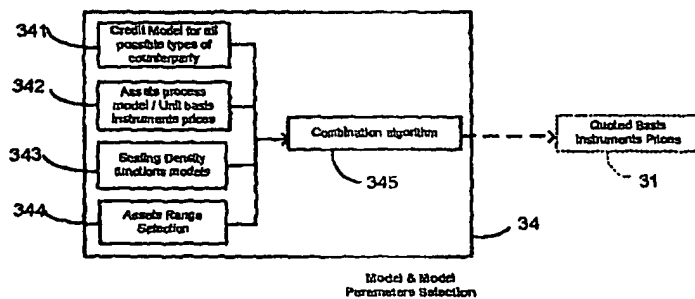


Figure 11: Model & Parameter selection

Basis instruments price selection process in an exchange framework
Illustration of Basis Instruments syndication to market makers to most efficiently reduce derivatives prices quoted to price takers

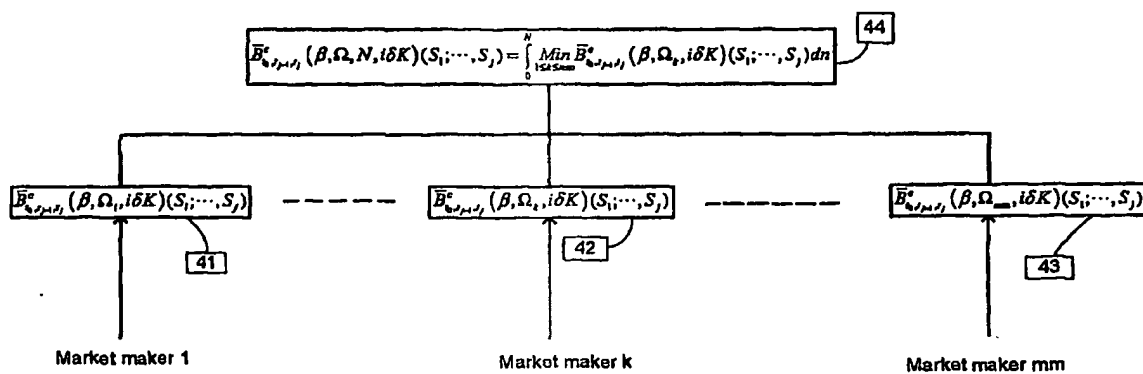


Figure 12: Basis instruments price selection process

Derivatives Pricing Approximation Process by selecting block units and recombining while keeping a cap on approximation error

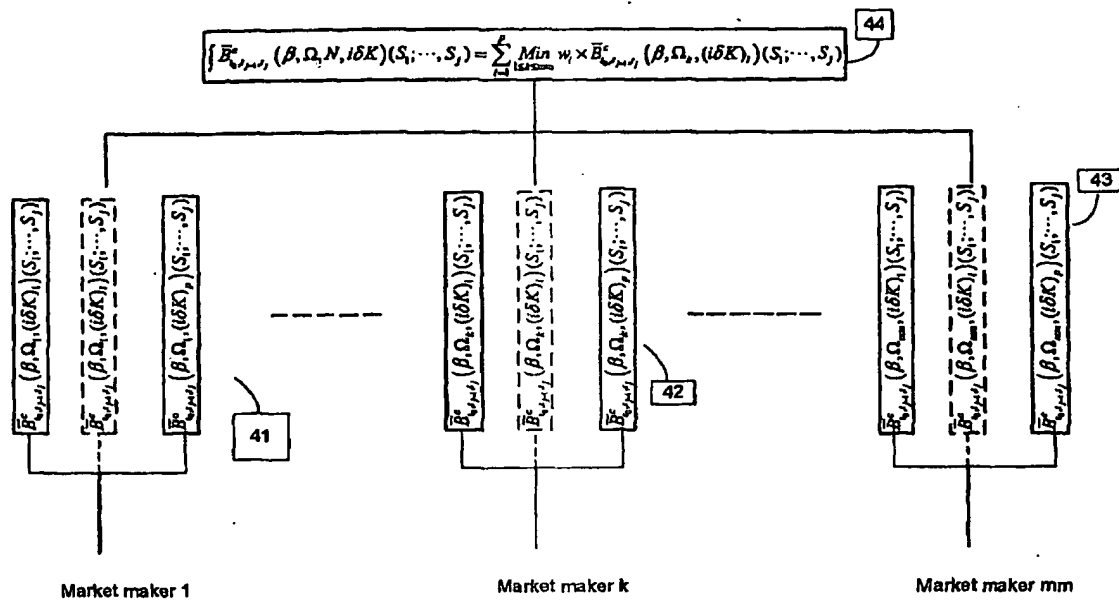


Figure 13: Derivatives Pricing Approximation Process by selecting block units

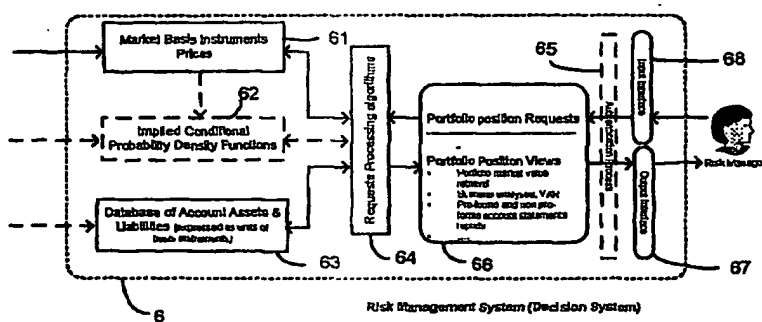


Figure 14: Risk Management system

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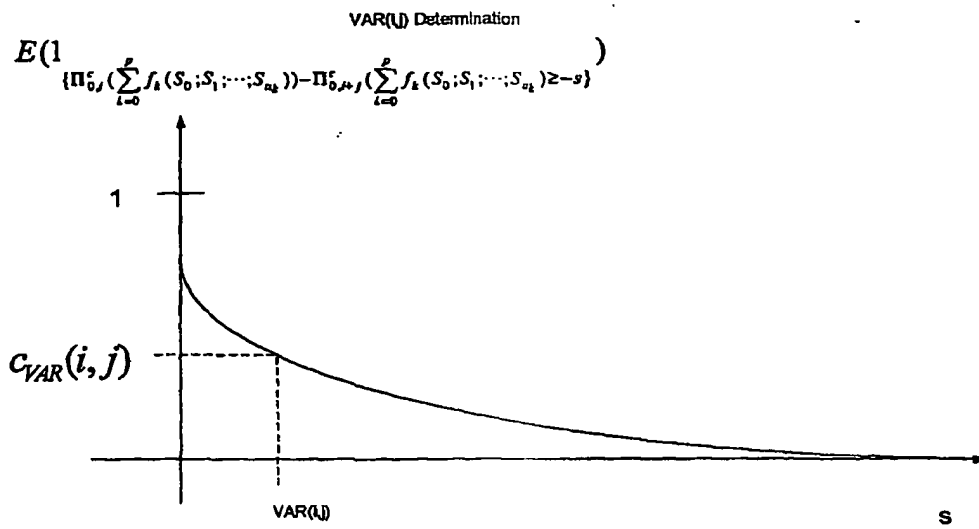


Figure 15: Risk Management, VAR Method

VAR Risk Management Method

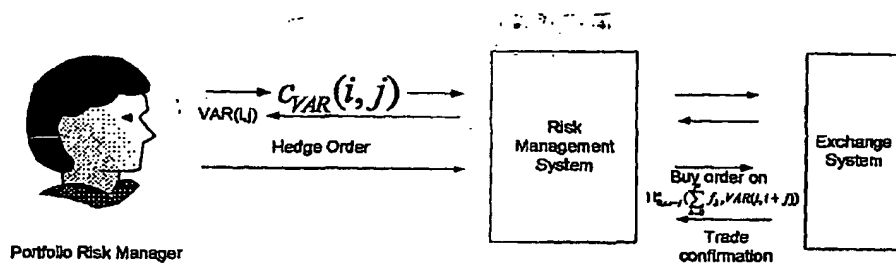


Figure 16: Risk Management, VAR Method

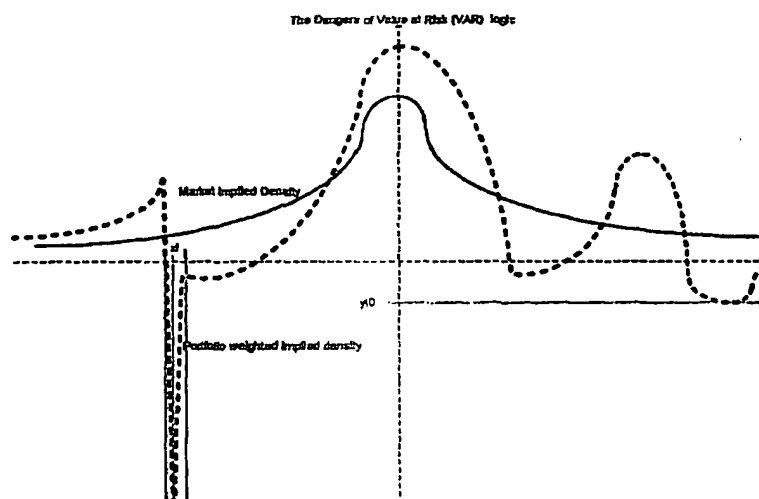


Figure 17: Risk Management, VAR danger.

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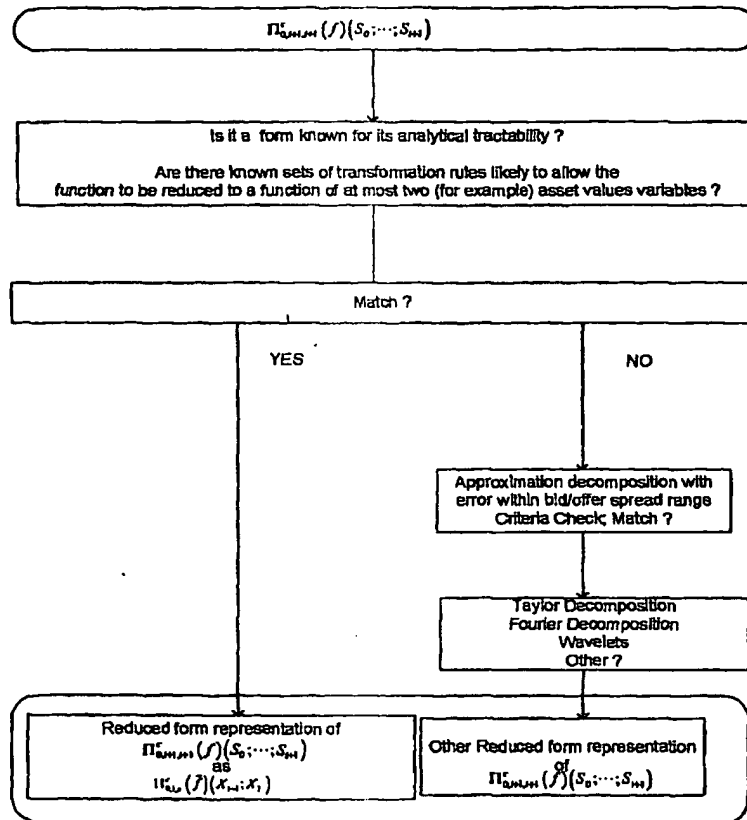


Figure 18: Compression to reduced form of Derivatives

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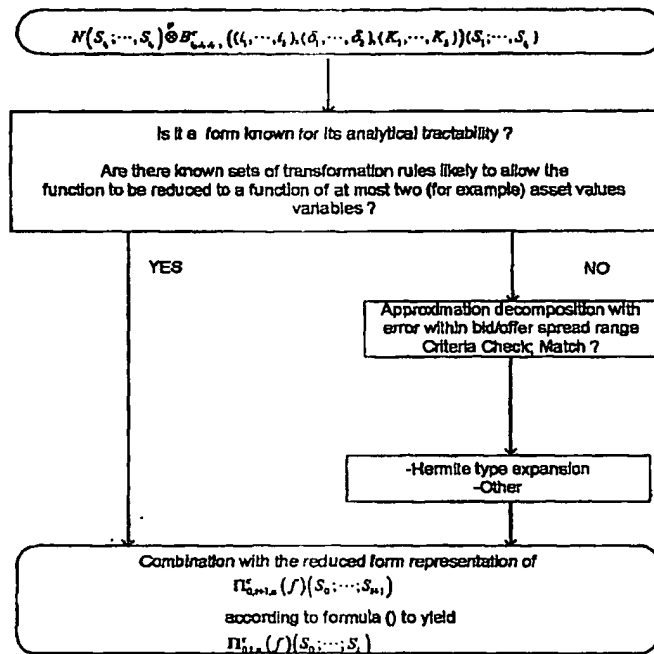


Figure 19: Compression to reduced form of Basis Instruments

Range of points taken in the double
summation in the proof of the appendix (*)
The sum of values represented by each point is the
desired double summation

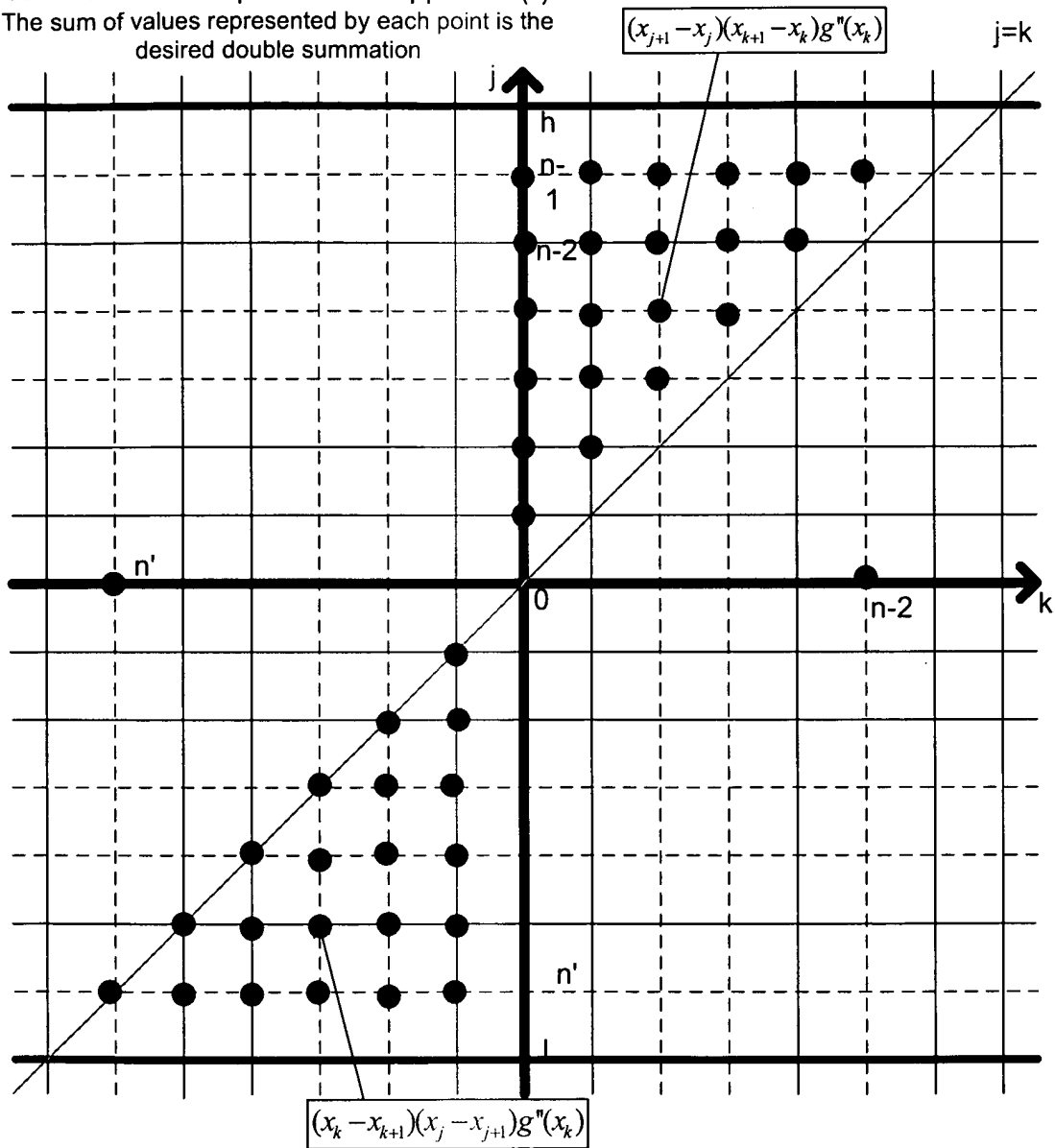


Figure 20: Appendix Illustration Case 2: m variables $m > 1$